



Building Positive Mindset of the Younger Generation about Agroforestry through Behavioral Approach

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Abstract

For Maluku's people, agroforestry is not a new thing because it has been done since long time ago, known as *Dusung*. As a local wisdom, agroforestry has great benefits not only in economic aspect but also in social and environment maintenance aspects, especially in the archipelago region with small islands. Day by day, people tend to replace agroforestry systems with intensive land management system that emphasizes productivity of the land without doing environmental preservation. If this condition continues, the negative impact that appears will be greater than its positive impact, therefore, agroforestry system needs to be preserved. This study aims to identify the mindset of the younger generation of agroforestry and efforts should be made to build a positive mindset of the younger generation about agroforestry. The study was conducted on 50 students of Pattimura University and 50 students of senior high school in Ambon City. Qualitative descriptive analysis of the data showed that most of young generation didn't understand about agroforestry, therefore didn't feel responsible in maintaining the sustainability of agroforestry systems. In response to these conditions, the behavioral approach can be one approach to build a positive mindset for the younger generation about agroforestry because mindset can't be separated from behavior.

Keywords: Agroforestry; behavioral approach; the younger generation .

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1. Introduction

Agroforestry is a land management system that combines agricultural crops and forest plants and/or animals simultaneously or sequentially based on culture of local society while preserving the environment [1]. Further he explained various forms of agroforestry which are often found in society, namely: (1) Agrisilviculture that is land management to produce agricultural and forestry yield, (2) Sylvopastoral; that is management of land forest to produce timber and livestock, (3) Agrosylvo-pastoral systems, that is land forest management to produce agricultural and forestry simultaneously as well as to raise livestock, (4) Multipurpose forest tree production system, that is management and cultivation of various types of wood that part of the wood, leaves and fruit will be used for human consumption or animal.

Referring to the definition, agroforestry is a land management system that focuses on some of the benefits as well which meet the needs of human beings, including animals and the conservation of the environment. That definition also showed the important characteristics of the agroforestry system as mentioned by [2] such as: (1) normally involves two or more species of plants or a combination of plants and animals but there must be woody perennials; (2) have at least two outputs; (3) Has a cycle of more than a year; and (4) Even the most simple agroforestry system is more complex than a mono cropping system.

For the people of Maluku, agroforestry system had long been known as *Dusung* that is defined as land use systems consisting of different types of plants, both forest and crop enterprises [3] and its ownership is a group of family or clan [4]. Commonly there are four types of *Dusung* [4; 5; 6] which can be briefly described as follows: (1) *Dusung Dati*, namely *Dusung* owned by one *dati* that located above or in the ground of *dati* which is jointly owned a spacious family (extended family) of a clan, (2) *Dusung Pusaka*, namely *Dusung* that belong to a group of heirs obtained by inheritance and then passed down through the generations, (3) *Dusung Negeri*, namely *Dusung* owned or controlled by *Negeri* because it owned by no one or no descendants as heirs so that *Negeri* has the right to master it, and (4) *Dusung Raja*, that owned by *Raja* (leader/king) and used for the sake and life of the *Raja*. *Raja* will lose the right to *Dusung* if he is replaced. As a local wisdom, *Dusung* is connected to the social institutions of local community and [4] explained that the rules or social institutions in society are also prevail to the all types of *Dusung*.

One of the *Dusung* distinctive as the local wisdom of Maluku's people is the benefits which is not only economic benefit, but also social benefit. Other benefit is environmental benefits such as improved soil health [7] that need to be maintained as was mentioned also by Alao and Shuaibu [8]. Along with the population growth that is accompanied with increased of needs, the community began to focus more on the economic benefit of land management. Land used only for making money in order to fulfill the life needed. Inheritance *Dusung* values to the younger generation rarely done, that's why they do not have a complete understanding about *Dusung*. In connection with this, research on the mindset of the younger generation about agroforestry in this case *Dusung* be interesting to do with objectives to analyze the mindset of the younger generation about agroforestry in this case *Dusung* and to analyze the efforts to build positive mindset of the younger generation using behavioral approach.

2. Methods

The study was conducted in Ambon City in May 2015. The samples were young people who were determined deliberately from the students of the Agricultural Faculty Pattimura University and senior high school students in Ambon City. Because of the number of population was so large, the number of samples was determined intentional that were 50 students of the Agricultural Faculty of Pattimura University, and 50 senior high school students in Ambon city, who still have *Dusung* in their villages. Primary data were collected from respondents through direct interview using a questionnaire. The questionnaire contains questions and statements about the knowledge and attitudes of respondents about *Dusung* and skills to manage *Dusung*. Secondary data were obtained from institutions/stakeholders related to this research. Data were analyzed using descriptive qualitatively supported by simple statistical calculations.

For publication purpose, this research was updated on September 2021 with the same methods. The result of data analysis based on research in May 2015 and September 2021 were similar. It means that there has been no change of the younger generation mindset about *Dusung* as an example of agroforestry.

3. Results and Discussion

3.1 Mindset of Young Generation about *Dusung* as Agroforestry System

Dusung as an agroforestry system is a local wisdom of Maluku's people that needs to be preserved. This is due to *Dusung* benefits that not only as a source of livelihood, but also in maintaining the environment. Over time, local people tend to left the system of *Dusung* and pay attention more on the production of the land regardless of environment condition. In other words, people tend to manage land for economics reason to meet their needs. This directly and indirectly affect the perception and understanding about *Dusung*, including young generation as shown in the Table below.

Table: Mindset of Young Generation about *Dusung* as an Agroforestry System

No.	Indicator	Respondent Category (%)			Totally
		Lower	Medium	Higher	
1.	The meaning of <i>Dusung</i>	62	28	10	100
2.	The benefit of <i>Dusung</i>	54	38	8	100
3.	Involvement in the management of <i>Dusung</i>	88	10	2	100
4.	Desire to stay in the village and manage <i>Dusung</i>	72	18	10	100
5.	Need for <i>Dusung</i> preservation	55	20	25	100

The table illustrated that now the younger generation does not has a real understanding about *Dusung*. The younger generation who are classified in the low category is characterized by a lack of understanding about the meaning of *Dusung*. *Dusung* is interpreted only as a family garden that the yield can be used to fulfill life need. Benefits of *Dusung* only seen in economy aspect, that the crop can be consumed or sold to get money. The younger generation who are classified in the medium category has more comprehensive understanding about

Dusung and they know that benefits of *Dusung* not only in economics aspect, but also in social aspect as a medium to keep family relationship. The younger generation who are classified in the high category has very good understanding about *Dusung*. *Dusung* not only seen as a garden, but also as a heritage that have to keep because its benefit in economics and social aspect and more important to preservation of environment. In simple words, agroforestry is the best land management to support food security and to reduce environmental damage [9].

In terms of *Dusung* management, the involvement of the younger generation is very low. This situation also caused by the parents that do not give the younger generation role to participate in managing *Dusung*. In general, managing *Dusung* done by parents and/or already marriage. The younger generation is considered premature to get involved in managing *Dusung*, especially young people who are studying. In the medium category, the younger generation is already involved in the management of *Dusung* by their parents although still limited to a discussion of *Dusung*, but it is very important to help young people understand about *Dusung* better; whereas in the high category, they have been involved especially when they are in the village during school holidays.

Another indicator is the opinion of *Dusung* preservation, most youth said that *Dusung* need to be preserved, but their opinion based on economic factors. The interesting thing is that most young people (68%) are not willing to live in the village and manage *Dusung*. For them, management of *Dusung* is better handed by their families who are living in the village. They are always ready to talk and discuss if needed.

3.2. Building Positive Mindset of the Younger Generation about *Dusung* as Agroforestry System

Data analysis showed that most of the younger generation of Maluku has less understanding about *Dusung*, *Dusung* is only seen as a family garden to get money. Along with the declining interest of young people to work in agriculture, the interest to manage *Dusung* also declined. In this connection, efforts are needed to build a positive mindset of younger generation about *Dusung*.

Building positive mindset of young people about *Dusung* can be done through a behavioral approach which includes three aspects, namely true knowledge of *Dusung*, attitudes about *Dusung* as one of the local wisdom, and skills to manage *Dusung* with focus on three main benefits, that are economic aspect, social aspect, and environmental conservation functions. When these three aspects can be realized, it will lead to the correct behavior of the younger generation in managing *Dusung*.

3.2.1. Knowledge of the *Dusung*

The complete knowledge of *Dusung* should be given to young people so that *dusung* not only be seen as a source of livelihood (economic benefits of *Dusung*), but also as a local wisdom that needs to be preserved. As a local wisdom, the development of agroforestry also depends on local knowledge on management practice [10]. The current trend, the younger generation is not given full and clear information about *Dusung* because their parents assume that management of *Dusung* is in parents. Several things that can give the complete knowledge about *Dusung* to the younger generation are: (1) Talking and discussing about *Dusung* (history of *Dusung*, types

of *Dusung*, benefits of *Dusung*, management system of *Dusung*, and other important things about *Dusung*) to the younger generation. These can be started from the family. Parents are expected to spend time with children to introduce *Dusung* as a whole and to encourage them to preserve it; (2) Through formal education, knowledge of *Dusung* can be one of the local contents in the curriculum so that all students can learn about *dusung*; (3) Promoting *Dusung* as a local wisdom of Maluku's people that need to be preserved. Promotion can be done through various means, such as an exhibition of *Dusung* as agroforestry system in Maluku, essay competition about *Dusung* for the younger generation, and fieldtrip to introduce *Dusung* significantly.

3.2.2. Attitude Towards *Dusung*

The correct attitude towards *Dusung* of the younger generation will manifest in the willingness to manage and conserve *Dusung*. Table in page four showed that most youth have opinion that *Dusung* need to be preserved, but most are based on economic reasons and because of *Dusung* is inherited from one generation to the next. The desire to stay in the village and manage *Dusung* also in low category because in the reality village less attractive to young people who have been educated in the city. *Dusung* management handed over to relatives who are living in the village.

Some efforts that can be done to establish a correct attitude toward *Dusung* of the younger generation are: (1) show evidences to young people about the benefits of *Dusung* which is not only economically, but also in terms of social and environmental preservation. Social benefit and environment preservation are benefits of *Dusung* which are much needed at this time. The development of life often weaken the interaction between the family and or groups in community. That's why *Dusung* can strengthen the interaction between families who are the owner of *Dusung*. Benefit *Dusung* as conservation function becomes important in connection with the maintenance of the environment, including climate change. Agroforestry be important for the archipelago, especially the area with small islands such as Maluku considering its function as a windbreak, prevent erosion, fertilize the soil, and so on, that's why it needs to be preserved, (2) show evidences to young people the negative effects of *Dusung* if not managed, including the loss one of the local wisdom, the environment is not maintained, and the disruption of social order like the loss of cooperation.

3.2.3. Management Skill of *Dusung*

Management skill of *Dusung* is required in order that managing *Dusung* well run. As a local wisdom, *Dusung* management cannot be separated from local culture, including Sasi (arrangement of the harvest), the ownership of *Dusung* including share of *Dusung* revenue. The younger generation needs to know things related to management skill of *Dusung* because management of *Dusung* is different from other agricultural business management. Efforts that can be done include: (1) Giving learning experiences about management of *Dusung* with a direct view (fieldtrip) of *Dusung*. See directly may provide a clearer learning experiences. (2) Giving the younger generation the opportunities to participate in managing *Dusung*, although limited participation. Participation is required in order to induce a sense of belonging of the younger generation about *Dusung*. Participation form can be determined by agreement between the owner of *Dusung* considering the existence of young people in the village are limited because they study at the school outside the village. (3) Giving

opportunities for young people to give new ideas in management of *Dusung* which are not contradict with the rules of *Dusung*. New ideas can be produced by anyone, including of the younger generation, therefore, any new ideas need to be considered with patterns and rules of *Dusung*. It is needed to accommodate the changes that occur in agriculture, especially for economic reason, but still watching and preserving social benefits and conservation function of *Dusung*. Good management of *Dusung* will give win-win situation that it evolves a synergy between agricultural production and forestry that is beneficial for increased food production, sustainable wood production and improvement of the quality of the soil [8]. That's why, agroforestry systems is a source of livelihood for rural communities [11].

4. Conclusion

- Building positive mindset of young generation is important thing to make *Dusung* as agroforestry system can be sustained.
- Good knowledge, attitude, and skill about *Dusung* are needed to get positive mindset of young generations about *Dusung* as agriforestry system
- Economic benefit of *Dusung* can be increased to attract the younger generation managing *Dusung* while maintaining social benefits and conservation functions of *Dusung*. It can be done by making *Dusung* as an agro-tourism.
- Family, government, and private sector have important roles to build positive mindset of young generations about *Dusung* as agroforestry system

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